Land and Population in British Tropical Africa
Author(s): R. W. STEEL
Source: *Geography*, Vol. 40, No. 1 (January 1955), pp. 1-17
Published by: Geographical Association
Stable URL: http://www.jstor.org/stable/40563782
Accessed: 24-12-2015 07:10 UTC

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Geographical Association is collaborating with JSTOR to digitize, preserve and extend access to *Geography*.

http://www.jstor.org

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

Land and Population in British Tropical Africa

R. W. STEEL

LAND AND POPULATION are subjects that must be very much our concern, as geographers. *Land* constitutes the area in which men live and as geographers we are interested in its extent and in the assessment of its present and future resources. *Population* forms an integral part of our studies and we deal with total numbers, with distribution and density, with the composition and the trends of population, and with standards of living. When we bring them together and consider the *relationship* of land to population and of population to land, we are concerned with what, to my mind, is the very essence of geography which is, as we sometimes put it, the study of man in relation to his environment—in other words, the study of *population* in relation to the *land*.

Land and population in East Africa was the title of a despatch, published some months ago, by the then Governor of Kenya, Sir Philip Mitchell.[1] It is a remarkable survey of the problems of East Africa as seen by one whose service in the area extended over forty years and who had been Governor, in turn, of Uganda, Tanganyika Territory and Kenya. His purpose was "to examine the problems of the land in relation to the economic, industrial and social development of the East African region as a whole and the increase of population which is taking place." In this paper I propose to concentrate on a few particular areas with certain special types of problems associated with the relationship of land and population. Some general points should, however, be made at the outset in order to give perspective to the regional examples that follow.

Any study of land and population in tropical Africa at once reveals numerous paradoxes and anomalies. On the one hand, there are vast tracts whose economic, social and political development clearly suffers because there are insufficient people to make the most of the resources. On the other hand, there are some districts where far too many people are seeking to make a living with far too little land at their disposal. Some areas are grossly under-developed, and cry out for people or for means of communication. Other areas, in contrast, are badly over-crowded: the land has been over-used and this now shows itself in the exhaustion or erosion of the soil and in the inability of the people to maintain even their relatively low standards of living.

➤ Mr. Steel is Senior Lecturer in Colonial Geography in the University of Oxford and Fellow of Jesus College, Oxford; his article is based on a lecture he gave at the Annual Conference of the Geographical Association at the London School of Economics, on 31 December, 1953.

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

Table I

BRITISH COLONIAL TERRITORIES IN TROPICAL AFRICA: AREA AND POPULATION[a]

	Area (square miles)		*Population (millions)*		*Population per square mile*
Gambia	4,003		0·28		70
Sierra Leone	27,925		2·00		72
Gold Coast[b]	91,843		4·40		48
Nigeria[c]	373,250		31·20		85
BRITISH WEST AFRICA		497,021		37·88	76
Somaliland	68,000		0·64		9
Kenya	224,960		5·70		25
Uganda	93,981		5·19		53
Tanganyika Territory	362,688		7·83		22
Zanzibar	1,020		0·27		270
BRITISH EAST AFRICA		750,649		19·63	26
Northern Rhodesia	228,130		1·98		7
Nyasaland	49,177		2·40		49
BRITISH CENTRAL AFRICA[d]		337,307		4·38	13
BRITISH TROPICAL AFRICA		1,584,977		61·89	39

[a] Latest available figures, in most cases the estimate for mid-1951.
[b] Including Togoland.
[c] Including Cameroons.
[d] British Central African figures do not include Southern Rhodesia.

A glance at such statistics and maps as are available (Table I) will probably not give this impression of under-development and over-population existing more or less side by side. British West Africa covers almost half-a-million square miles and has nearly 38 million people—31 millions in Nigeria alone. British East Africa, including Somaliland and Zanzibar, is half as large again, covering three-quarters of a million square miles, but it has only just over half the population of West Africa, rather under 20 millions. Northern Rhodesia and Nyasaland, the "colonial" parts of what is now British Central Africa, are, by comparison, small in both area (337,000 square miles) and population (a little over 4 millions). By the standards of Europe or of Monsoon Asia, the density per square mile figures are unimpressive—39 per square mile for the whole area, ranging from 13 in Central Africa and 26 in East Africa to 76 in West Africa. Even if we break these figures down further or concentrate on the figures for individual territories, there are no very high densities of population, apart from Zanzibar (270 per square mile). There is, for example, nothing comparable with the densely peopled Belgian Trust Territory of Ruanda-Urundi (on the western side of the East African plateau) where about 4 million people live on 21,000 square miles—a density of nearly 200 to the square mile.[2]

There is, in fact, no evidence of over-population in any extensive area of British Africa. There are, however, cases of the local over-crowding of people if we analyse the figures more closely and in terms

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

of much smaller districts: and this is what we must do if our studies are to be in any sense realistic and to take any account of the diversities of regional geography. We must, for example, take note of the fact that much of British Africa is unusable, at least under present conditions, because of the nature of the rainfall. Average totals may seem adequate—in, for example, the extensive areas that have average annual rainfalls of between 20 and 40 inches. But allowance must be made for evaporation, always considerable in tropical areas, and for the often remarkable fluctuations of rainfall from year to year. On the score of unreliable or inadequate rainfall alone, we must omit from any calculations of the population-carrying capacity of the land the whole of Somaliland, perhaps a half of Kenya, and very extensive parts of both Tanganyika and Northern Rhodesia, together with large areas in the interior of the West African colonies.

Again, some districts are too high or too rocky for any human use, as in the volcanic areas of East Africa, where several mountains like Kilimanjaro and Kenya exceed 10,000 feet in height, or in the Ruwenzori massif of western Uganda. Other regions, by contrast, suffer through being too low or too poorly drained: the mangrove areas of the West African coastlands, for example, and parts of the larger river valleys, including the Volta, the Niger, the Benue and the Zambezi. Further checks on settlement and on the way of life of the African peoples are imposed by the widespread occurrence of disease-carrying insects such as the *Anopheles* mosquito (the carrier of malaria) and the tsetse fly. This fly is responsible for sleeping sickness in humans and, in livestock, for the disease *trypanosomiasis*, or *nagana* as it is often called in East Africa. It affects two-thirds of Tanganyika and five-eighths of Northern Rhodesia, and no British territory in tropical Africa is entirely immune from this scourge.

We may confidently expect that the effect of these limiting influences will be considerably modified in future years with the progress of science and medicine and with developments in technology: but as geographers, seeking an assessment of the position as it is at the present time, we are bound to take careful note of them. They help to explain why, when the density figures do not suggest any obvious pressure of population upon the land and its resources in most parts of tropical Africa (rather the reverse, in fact), it is nevertheless true to say (as Sir Philip Mitchell does) that in many areas "the pressure of people on the land is more than it can properly bear, even if the standard of farming were to be greatly improved."[3] On the one hand, there is the fact that an area considerably larger than that of Europe west of the Iron Curtain contains a population only one-fifth larger than that of the United Kingdom. On the other hand, there is the fact that some districts, where agriculture is the sole means of livelihood, have a density of population comparable with that of intensively cultivated areas like the English Fenland yet depend upon most extravagant and

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

wasteful systems of land use, such as "shifting cultivation" or nomadic or semi-nomadic pastoralism. Behind the apparent simplicity and evenness of population distribution there lie, largely hidden and too often forgotten, marked concentrations of population where indeed "the pressure of people on the land is more than it can properly bear."

In the Eastern Region of Nigeria, for example, there are extensive parts of the Onitsha and Owerri Districts with densities of 500 or more to the square mile and, locally, much higher figures are reported—even 1,700 to the square mile according to one recently published official report.[4] In Kenya some of the Native Reserves carry average densities of more than 400 to the square mile, and the same is true of parts of Nyasaland, which supports its population only by exporting much of its surplus, as temporary labourers, to the farms, factories and mines of Southern Rhodesia and even farther afield. The growth of towns is a further cause of trouble. Ibadan in the Western Region of Nigeria, with more than 350,000 inhabitants, is outstandingly large, but within sixty or seventy miles of it there are nine other Yoruba towns, each with a population exceeding 40,000. Lagos, the capital of Nigeria, now has more than a quarter of a million people, and only two out of every five of its inhabitants are members of the local tribe, the Yoruba. Nairobi, whose site was uninhabited a little over fifty years ago, has nearly 120,000 inhabitants today, including 64,000 Africans and nearly 38,000 Indians. These figures may not be very impressive by European or American standards; in Africa, however, they are significant because they are directly responsible for many of the problems and tensions of the societies and economies of tropical Africa at the present time.

LAND AND POPULATION IN KENYA

I turn now to some specific illustrations in British Africa where the relationships between land and people are not as happy, balanced or stable as they used to be. I begin with East Africa because this is the area where so much public concern has recently been expressed about the problems of both land and population. Less than 20 million people live in an area that is 3½ times that of France, but since large parts of Tanganyika and the whole Northern Frontier Province of Kenya are virtually waterless (and so, under present conditions, uninhabitable), the area in which people live is much more limited than the figures suggest. Clement Gillman's study of population distribution in Tanganyika[5] showed that almost two-thirds of the territory was uninhabited while two-thirds of the population lived on only one-tenth of the land—notably on the fertile slopes of volcanic peaks like Kilimanjaro and Meru and in well-watered districts such as Sukumaland,

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

an area to the south of Lake Victoria where more than a million people live and in which, as D. W. Malcolm's recently published book[6] shows so clearly, many of the signs of over-cropping and soil-exhaustion are now beginning to show.

What might be called the "natural" unevenness of population distribution has been further emphasized in some parts of tropical Africa by political action and by economic tendencies. This is particularly true of Kenya where considerable areas have been alienated to Europeans in the relatively well-watered, fertile and productive Highlands in an attempt to establish a settler-community with roots firmly based in the colony: simultaneously, as part of the same policy, the Kenya Government has established many "Native Reserves," in which Africans have their land-rights guaranteed to them but where Europeans cannot, under any circumstances, own land.

Table II

KENYA COLONY AND PROTECTORATE: LAND AND POPULATION

LAND (square miles)		POPULATION (1948 census)
Northern Province and unclassified area 150,000		186,000 Africans.
Native Reserves 52,000	15,250	For *c.*60,000 Masai.
	720	Forest Reserves.
	36,030	For high proportion of total African population of *c.*5¼ millions.
Gazetted Highlands 16,000	4,000	Forest Reserves.
	12,000	For European settlers (*c.*4,000 are directly engaged in agriculture).[a]
Lakes 5,000		
Miscellaneous (Towns, etc.) .. 1,900		
TOTAL AREA 224,960		TOTAL POPULATION .. 5,405,966
		including Africans 5,251,120
		Europeans 29,660
		Indians .. 90,528
		Arabs .. 24,174
		Others .. 10,484

[a] Of the European population of 29,660, 17,710 live in townships (10,830 in Nairobi and 2,027 in Mombasa). There are *c.*2,700 European civil servants.

Table II attempts to provide a balance sheet for land and population in Kenya. It shows how two-thirds of the Colony—the Northern Frontier Province—supports only 186,000 out of the total population of nearly 5½ millions, while most people live either in the 36,000 square miles of the Native Reserves or in the 12,000 square miles of the "Gazetted Highlands" where land has been alienated to Europeans. Of the 30,000 Europeans in Kenya, about 4,000 appear to be directly engaged in agriculture. Figure 1 indicates the distribution of the various types of areas. It should be noted that the alienated areas, lying for the most part at 5,000 feet or more above sea-level, include some of the colony's most favoured lands from the stand-point of climate, soil and water-supply, and their value is further enhanced by their nearness to the railways. In contrast, the Native Reserves are poorly

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

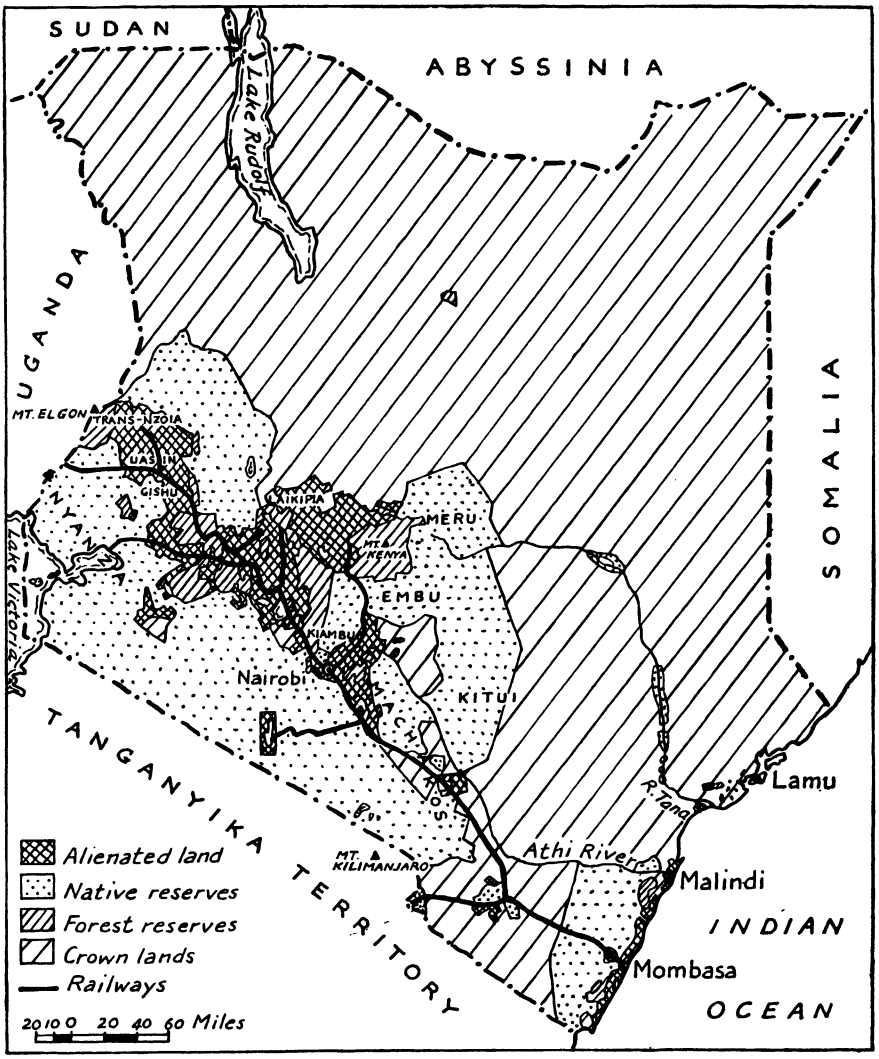

Fig. 1.—Kenya: distribution of land.

endowed by nature and are generally remote from the railways. Figure 2, prepared on the basis of the figures of the census of 1948, shows more clearly some of the problems of many of the Reserves. Several have densities exceeding 350 to the square mile over extensive areas—notably in the Fort Hall, Kiambu and Nairobi Districts; other reserves have more than 200 to the square mile (North Nyanza and South Nyeri) while the Central and South Nyanza Reserves and Kericho in the west and Embu in the centre have figures of more than 100. Under the prevailing system of African land use, these are very high densities: and they are likely to become even higher in the future for Kenya's population is increasing so rapidly that it is likely to

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

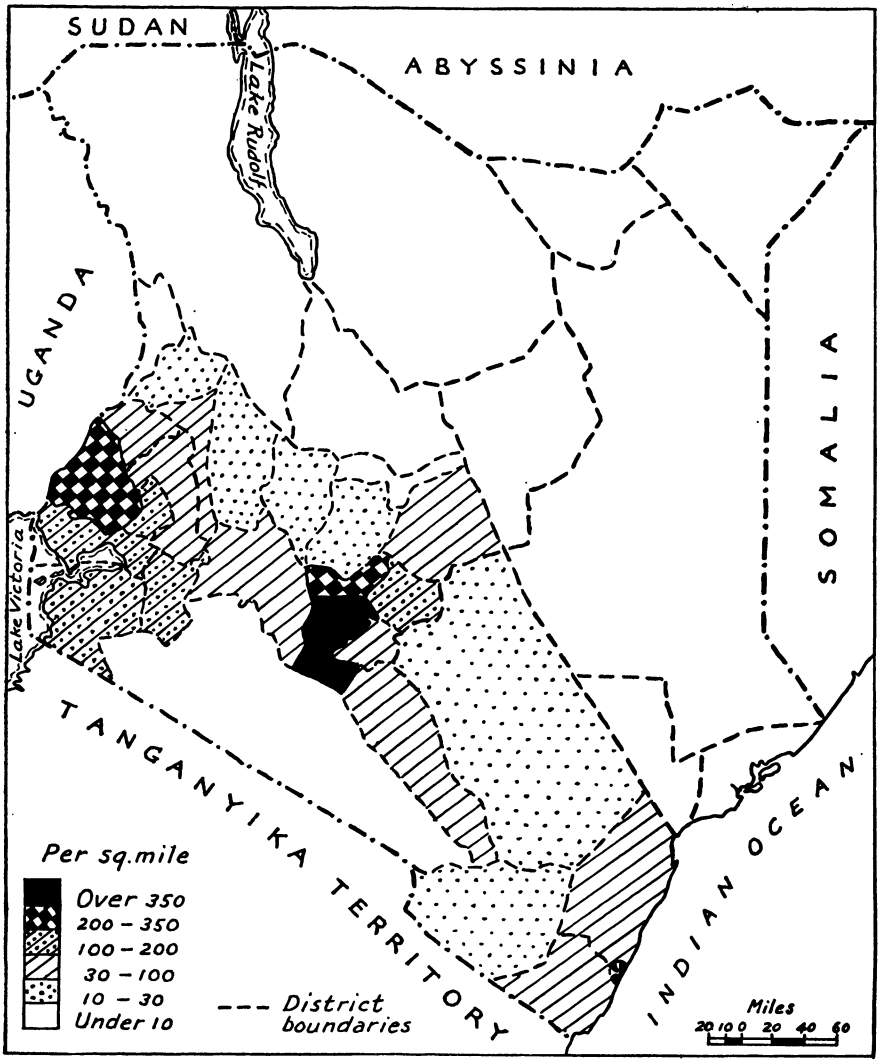

Fig. 2.—Kenya: density of population by districts.

double itself within the next thirty-five years. Kenya, hard-pressed today to maintain, at a reasonable standard of living, its $5\frac{1}{2}$ million people may have to support 11 or 12 millions before the end of the century.

How is this problem of maladjustment between land and people to be met, now and in the future? We need to be careful here. Geographers, with their maps and diagrams and with their correlations of different factors, may think the solution is easy: on the face of it a redistribution of land as between European and African might achieve much. But Sir Philip Mitchell has shown clearly that even if all the land at present alienated to Europeans but not yet used by them were

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

made available to African settlement, it "could at best provide only slight and temporary relief for African congestion."[7] The problem is, in fact, much deeper and more fundamental: it lies in the common system of cultivation and stock-raising—in the defects of the methods used and in the lowness of the yields obtained. A few years ago it was said: "An ignorant man and his wife with a hoe are a totally inadequate foundation for an enlightened state of society, a high standard of living and elaborate social services." Those words are even truer today. Here is a challenge to the best that science and technology can produce for East Africa's special needs and problems: but whatever systems may be devised they must be capable of being integrated into African society as it is and of being adopted at reasonable cost by large numbers of African farmers. For example, grandiose methods of mechanized agriculture, as tried so unsuccessfully in Tanganyika, are obviously unsuitable. Kenya needs something that is both realistic and practicable and that recognizes the nature of the ecological and sociological, as well as of the economic and political, problems. The solutions are not going to be discovered easily. Their investigation constitutes one of the main tasks of the Royal Commission on Land and Population in East Africa, set up, under the chairmanship of Sir Hugh Dow, in October 1952. The Commission, significantly, includes in its membership two experienced agriculturalists and a professor of colonial economic affairs. Among its objectives is the framing of recommendations with reference to:

(1) the economic development of the land already in occupation by the introduction of better farming methods;

(2) the adaptations or modifications in traditional tribal systems of tenure necessary for the full development of the land; and

(3) the opening for cultivation and settlement of land at present not fully used.[8]

The Commission's report may very well prove to be one of the outstanding contributions to economic and social development, not only in East Africa but in tropical areas generally, for a generation or more to come.

THE COPPER BELT OF NORTHERN RHODESIA

In Kenya the maladjustment of land and population is considerably complicated, though not primarily caused, by the presence of a European settler community. In the Copper Belt of Northern Rhodesia the chief influence is that of European and American capital, which in itself is indicative of the growing interest in the exploitation of the mineral deposits of Africa. Northern Rhodesia is a vast territory, three times the size of the United Kingdom (Fig. 3). It is 900 miles from south-west to north-east, and Ndola, the administrative centre of the Copper Belt, is 1,200 miles by rail from the nearest ports—

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

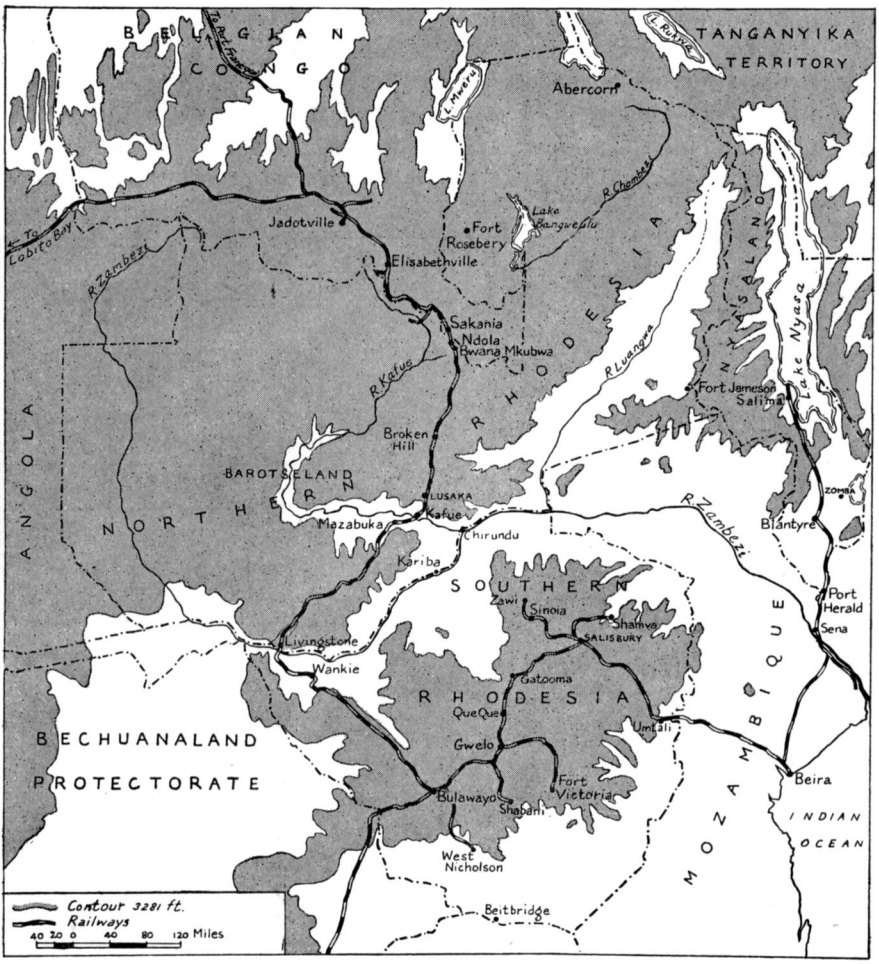

Fig. 3.—British Central Africa.

Lobito Bay on the Atlantic and Beira on the Indian Ocean. Yet its total population hardly exceeds 2 millions, for its soils are generally poor and its rainfall often erratic and unreliable. It is, however, not the poverty-stricken area today that the description so far might suggest. Thanks to the mining of copper, its economy is rapidly expanding and its prosperity is such that in recent months the value of its export trade has actually surpassed that of Southern Rhodesia, which has hitherto always been regarded as its wealthier neighbour. Originally the territory was opened up by the railway that came from the south, across the Zambezi, and on into the mineral-producing province of Katanga in the south of the Belgian Congo, but the real development of Northern Rhodesia dates from the development of the Copper Belt during the last twenty-five years. Just before the war, 212,000 tons were mined; this increased to 228,000 tons in 1941 and

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

309,000 tons in 1951. The value of the colony's total exports increased from £10 millions in 1939 to £82·6 millions in 1951. Unfortunately more than nine-tenths of these exports are copper. Copper is not, as is often said, the backbone of the Northern Rhodesian economy; it is virtually the entire economy, so far as international trade is concerned. Vast areas are unproductive and many are almost uninhabited because

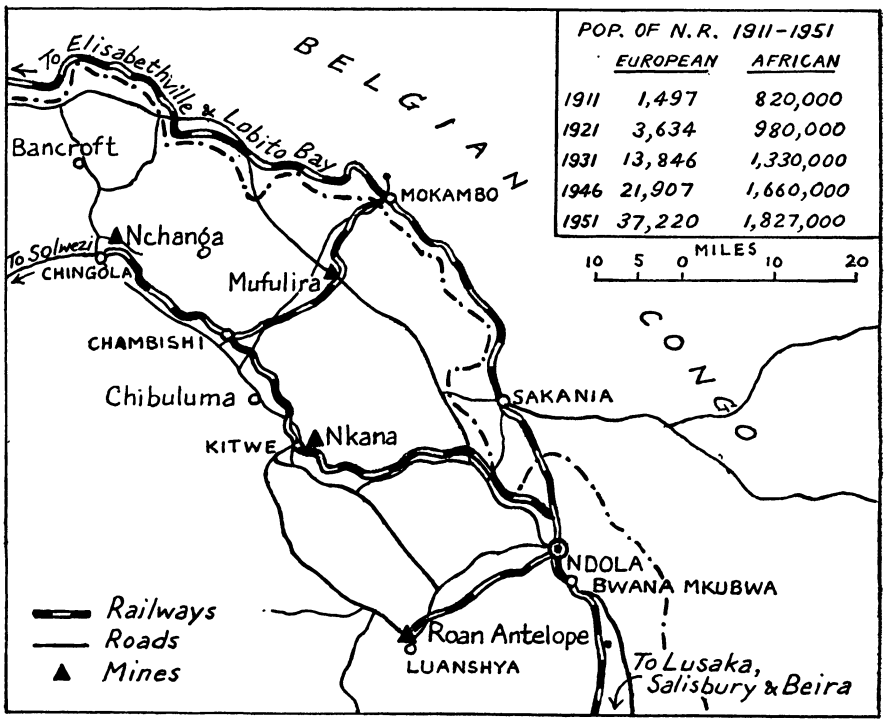

Fig. 4.—Northern Rhodesia: the Copper Belt.

of unreliable or inadequate rainfall, poor soils, excessive isolation, or the incidence of tsetse fly which occupies extensive parts of the territory. Such prosperity as Northern Rhodesia enjoys—and it is considerable today—comes almost entirely from a mere 1,200 square miles of the land and is the direct result of the labours of less than 50,000 of the population, who work at the four great mines of the Copper Belt at Nchanga, Mufulira, Nkana and Roan Antelope (Fig. 4). In this area the links between land and people are very loose: many of the Africans in the Copper Belt are migrants who have come, in search of employment at the mines, for long or short periods, and often over considerable distances from Barotseland to the south-west and, above all, from the Bemba country that lies to the east. As yet, there has been little attempt to encourage the permanent settlement or "stabilization" of the African population: such would indeed be contrary to the policy of

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

both Government and the mining companies at the present time, though there are indications now of a changing attitude to this problem. There is, therefore, in this relatively small district, a concentration of uprooted, often detribalized Africans, in marked contrast to the vast districts elsewhere in Northern Rhodesia that are poorly developed and little populated—"the silent lands" as they have sometimes been rather expressively described.

The problems of the Copper Belt reflect those of Northern Rhodesia as a whole, and many of them are, in one way or another, the result of the increasing contact of indigenous Africans and European immigrants. Table III gives the population figures for various dates in Northern Rhodesia and shows how rapid has been the growth of the European population in recent years.

Table III

POPULATION OF NORTHERN RHODESIA, 1911–1951

	European	*African*
1911	1,497	820,000
1921	3,634	980,000
1931	13,846	1,330,000
1946	21,907	1,660,000
1951	37,220	1,827,000

A high proportion of the newcomers come from the Union of South Africa and are Afrikaans-speaking: many of them are convinced believers in the doctrine of *apartheid*, as expounded by the Nationalist Party Government in the Union. They formed the backbone of the Confederate Party which fought, and lost, the first Federal election in British Central Africa. They hold strong views on the question of the relationships of African and European in society generally and in industry in particular. Here in Northern Rhodesia, and most markedly in the Copper Belt, there is a real and deep-seated clash of interests and aspirations in a multi-racial society. The controversy turns largely on the question of rights. What are the Africans' rights—in land, in employment, in politics, in education, in the profits of the mining industry, and what are his obligations to society at large? What are the rights—and what the responsibilities—of the European settler and of the European engaged in mining or in commerce in a country where they must ever be numerically very much in a minority, however great their importance in society, economics or politics?

The word "partnership" has been much used in recent years in the many discussions on Central African Federation. Here in Northern Rhodesia more than anywhere else there would seem to be at the moment both a need and a scope for a really practical application of partnership. With it, there is a prospect of the orderly development of the Federation for the mutual benefit of both African and European;

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

without it, there will be a grave danger of economic dislocation, social confusion and political chaos.*

LAND AND POPULATION IN THE GOLD COAST

In Northern Rhodesia, as in Kenya, the European has brought new economic opportunities to the country but he is also directly (however unconsciously) responsible for many social and political difficulties, and has undoubtedly intensified some of the problems of land and population. West Africa is a part of the continent where, for climatic and other reasons, the European has not gone as a settler, and where, so far as the British territories are concerned, there has been no alienation of land to Europeans or other non-natives. Does this comparative lack of Europeans affect the relationships of land and people? West Africa is able to support many more people (Table I): the Northern Region of Nigeria alone has almost as large a population as the whole of British East Africa. Many parts of West Africa are better watered and generally more productive than areas in East Africa, and there are no population problems comparable in their intensity with those of East Africa. Moreover, where there are problems, they lack the special difficulties that arise from European participation in economic activities, as in the Kenya Highlands and in the Northern Rhodesian Copper Belt.

There are, none the less, several problems concerned with the relationship of the density and growth of population to the resources of the land that repay careful study. They include those arising from pressure of population in the Onitsha and Owerri districts of the Eastern Region of Nigeria already briefly referred to;[9] or the manner in which remarkably high densities of population are supported around some of the large emirate capitals in Northern Nigeria, notably Kano, where the land is cultivated very carefully and intensively—a most

* On 29 July, 1954, the following resolutions were proposed in the Legislative Council of Northern Rhodesia by Mr. J. S. Moffat and adopted with one dissentient voice:

(1) The objective of policy in Northern Rhodesia must be to remove from each race the fear that the other might dominate for its own racial benefit and to move forward from the present system of racial representation in the territorial legislature towards a franchise with no separate representation for the races.

(2) Until that objective can be fully achieved a period of transition will remain during which special arrangements in the Legislative and Executive Councils must continue to be made so as to ensure that no race can use either the preponderance of its numbers or its more advanced stage of development to dominate the other for its own racial benefit.

(3) During this period of transition, special legislation must be in force to protect, to the extent that may be necessary, the interests of either race. Meanwhile this Council notes and agrees with the statement of the Secretary of State that it is the duty of Her Majesty's Government to ensure that on contentious issues the balance is fairly held.

(4) Every lawful inhabitant of Northern Rhodesia has the right to progress according to his character, qualifications, training, ability and industry, without distinction of race, colour or creed.

These "Moffat Resolutions" represent a real attempt to define "partnership" and their adoption by the Council may have very important consequences in Central Africa.

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

skilful adaptation of man to a by no means promising or ideal environment;[10] or the extent of soil exhaustion and erosion over much of Sierra Leone, resulting from over-farming and now, happily, being ameliorated in places by the adoption of rice-farming in the hitherto unused swamps.[11] But perhaps the best lessons can be taken from the Gold Coast, the territory where there has been maximum African progress from every point of view, with, at the same time, a minimum of direct European intervention.

The population of the Gold Coast, 4,400,000 (rather less than half that of Greater London), is spread over an area equal in size to that of the United Kingdom. Thus the average density of population is 48 to the square mile, but in fact two-thirds of the people live in the southern half of the country, and another one-eighth is concentrated in the extreme north-eastern corner. Extensive areas in the Volta basin have almost no inhabitants, since they are flooded during the rains and virtually waterless during much of the rest of the year. It is in the southern districts that nearly all the economic development of the Gold Coast has taken place (Fig. 5). Cocoa, first introduced in the Akropong and Aburi areas of the south-east seventy-five years ago, has spread steadily through the forest country where the ecological conditions are peculiarly favourable to cocoa. In recent years the disease known as "swollen shoot" has taken a heavy toll of many of the older-established cocoa areas, notably around Koforidua and Tafo, so that new cocoa-farming districts have developed towards the west and north-west. Also in the southern parts of the country there has been increasing working of minerals during the past half century, particularly of gold (especially at Tarkwa, Prestea, Obuasi, Konongo and Bibiani); manganese (at the Nsuta mine, the world's largest exporter of high-grade manganese); industrial diamonds (in the Birim valley, centred on Akwatia); and bauxite, which has already been worked at Awaso (to which the railway from Dunkwa was specially built during the war to open up the mines) and at Mpraeso, while future mining is planned to take place at Yenahin to the west of Kumasi.

It is hardly surprising to find that the south, the scene of most of this economic activity, possesses all the railways, most of the road network, and the majority of the towns, including all those with more than 20,000 inhabitants. Thus within the single political area of the Gold Coast two distinct economic regions may now be recognized. One is already developed and is still rapidly progressing: the other is undeveloped and indeed hardly seems capable of much economic advancement, at least until its communications are improved, though an interesting mechanized agricultural pilot project has been established at Damongo (the Gonja Development Scheme), which it is hoped will improve agricultural methods and also increase food supplies. This already marked disparity between north and south will become even greater if the Volta River hydro-electric power project is carried through as

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

planned. The proposal is to dam the Volta at Ajena and so create a vast lake covering 2,000 square miles, and to generate electricity which will be used particularly for the refining of locally-mined bauxite and the production of aluminium. Thus the south will have the dam, the generating plant and most of the lake, as well as the bauxite mines and the smelter, which will be built at Kpong. In connection with this scheme various railways are proposed and a new port is being built at Tema, a few miles east of Accra. These, and other, developments suggest that the south will have to depend, even more than it already does, on supplies of labour which it draws in considerable numbers from the Northern Territories of the Gold Coast and from the French territories beyond.

The Gold Coast exhibits a degree of economic activity and attainment that is unknown in Kenya, where European settlers account for nearly all of the export trade, and it possesses a range and diversity of economic development that is conspicuously lacking in Northern Rhodesia. Moreover it has none of the tensions that are so noticeable in Kenya through the proximity of African and European, nor does it depend excessively, as Northern Rhodesia does, upon a single commodity produced from a very limited area. But it is wrong to assume that the Gold Coast will, therefore, have no problems of population growth and land use comparable with those of Kenya and Northern Rhodesia. Here in West Africa, as in East and Central Africa, the dominant system of farming throughout the forest country is notoriously wasteful of both land and labour. Whether we call it "shifting cultivation" or "bush fallowing" or even "rotational farming," and however much we regard it as a not unreasonable adaptation to environment, we cannot deny that it is a most extravagant way of using the land. It may be satisfactory so long as there is, to use Sir Keith Hancock's phrase,[12] "plenty of elbow-room," but it ceases to be practicable as a system of agriculture where population is growing, apparently quite rapidly, both by natural increase and by the immigration of labour from the north. Furthermore, at a time when there is need to produce more food than ever before, an increasing area is being taken for purposes other than that of the cultivation of crops for local consumption: for the growing of permanent crops for export, such as cocoa; for mining operations; for houses, schools, other buildings, roads, and so on. Where shifting cultivation is practised, so much land has, in any one season, to be left fallow in order that it may recover its fertility through the regrowth of the natural vegetation. The proportion of fallow varies considerably with the length of the rotation. Ideally land is cultivated only one year in ten or even twenty years: but if there is pressure of population upon the land available for cultivation in an area, the figure may drop to five and sometimes even to two or three. Round a large town land may have to be cultivated almost continuously, but in such cases yields are usually very low.

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

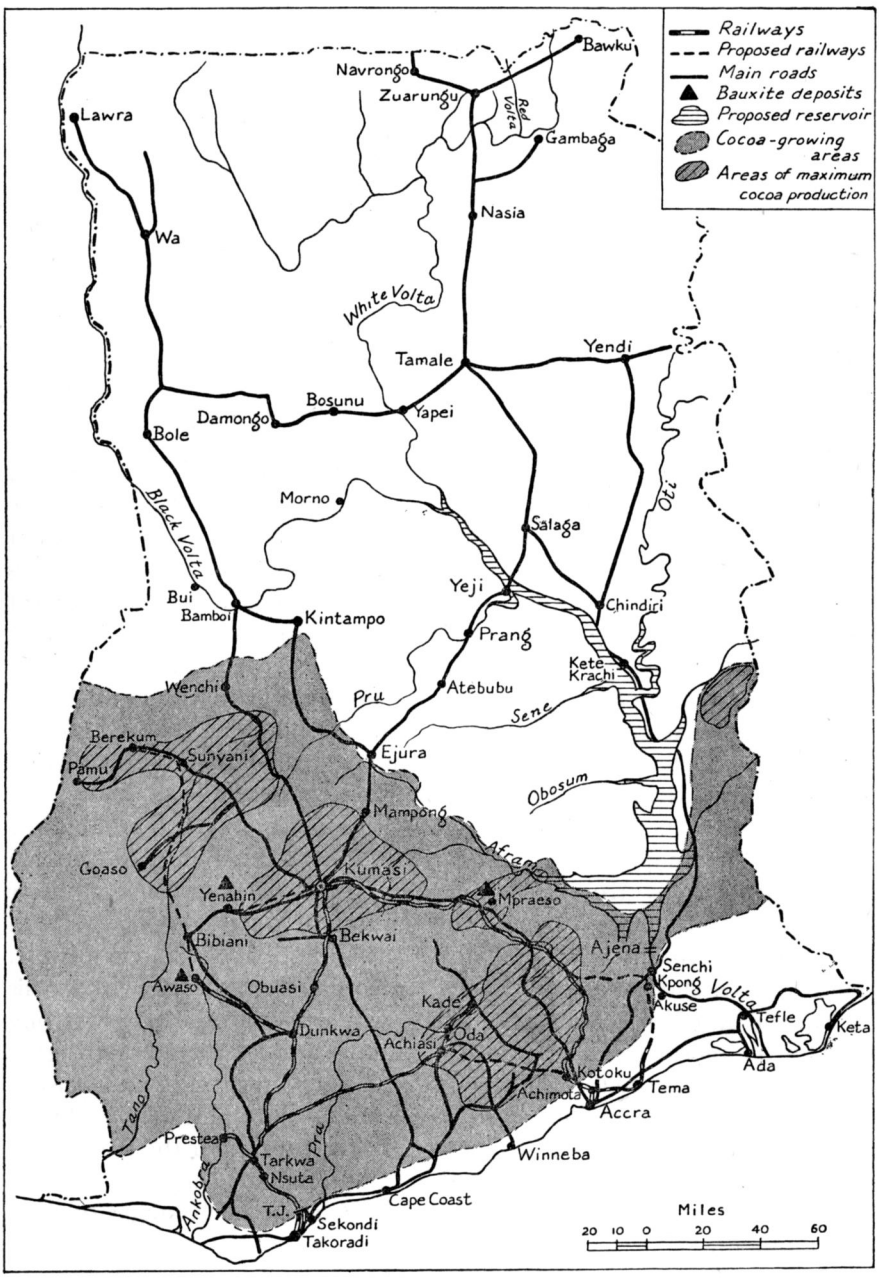

Fig. 5.—The Gold Coast: economic development. A new port is being built at Tema, and if the Volta River scheme is carried out a dam will be placed at Ajena to create the lake shown in the map. The smelter will be built at Kpong. Various proposals for new railway construction are shown including that of a line from Awaso into western Ashanti at Berekum. For further details see "Recent railway developments in the Gold Coast," pp. 49–50 of this issue.

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

Problems such as these were studied in the Gold Coast a few years ago by the Ashanti Social Survey.[13] A land-use survey of the immediate neighbourhood of the town of Agogo showed the areas under forest or cocoa or food crops and indicated the very great extent of the land that had been cultivated at some time in the past but was lying fallow at the time of the survey in 1946. The study suggested that this part of Ashanti has undergone a real commercial and industrial revolution, but that its food-producing methods have hardly changed at all. One cannot view with any confidence the food supplies of the future, especially when it is recognized that not only is the total population increasing quite rapidly but that there is a steady growth in the numbers engaged in occupations other than agriculture. Clearly there is an urgent need in Ashanti, and in West Africa as a whole, for more intensive and productive methods of food-farming. But what methods can be adopted in areas where tsetse fly prevents the keeping of livestock and, therefore, the development of mixed farming systems; where problems of transport and supply make difficult the application of chemical manures; and where, in any case, we do not yet know enough of the reactions of tropical soils to artificial fertilizers to ensure that they are applied in the right manner and in the correct quantities? Scientific research still has innumerable problems and almost unlimited scope in many parts of tropical Africa.

Among other problems of land and population in the Gold Coast studied by the Ashanti Social Survey was the significance of the growth of towns and of the steady increase in the urban population. More recent figures, those of the comprehensive census of 1948, show that there are nearly 60 Gold Coast towns with more than 4,000 inhabitants and that the majority of these are in the commercially developed south. Judged by tropical African standards, two at least of these towns are quite large—Accra, the capital of the Gold Coast, with 140,000 and Kumasi, the chief town of Ashanti, with 80,000 people. They already show many of the problems that we associate with towns in Europe and North America. There would seem to be a very strong case for the most careful planning of land use and for the most stringent control over the growth of towns if serious problems in the relationship between land and people are to be avoided. No amount of political progress will compensate, either now or in the future, for the emergence of social or economic problems that might have been avoided had they been recognized and properly tackled in the early stages of their development.

From these three illustrations chosen from Kenya, Northern Rhodesia and the Gold Coast, many lessons of general applicability could be drawn. But two special points may be emphasized. One is the fact that geography is always a dynamic subject, and in tropical Africa there are any number of topics for the fullest understanding of

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions

which a training in, and a knowledge of, geography should stand us in good stead. The fundamental problems in Africa today are (to paraphrase Sir Philip Mitchell)[14] those of *man* in relation to the *land* and to the new forces and pressures which the opening of the continent to external social and economic influences has introduced.

The second point refers to Britain's responsibilities in tropical Africa today. These are greater, not less (as is sometimes suggested), than ever before, if only because of the intensity and seriousness of these problems of the relationship between the land and the people, of which this paper has given a few examples. It is essential that there should be a really well-informed public opinion on matters of this sort in this country, as well as in Africa, at the present time. Here there is a direct challenge to us—in our thinking, our reading, and our teaching.

REFERENCES

[1] Sir Philip Mitchell, *Land and population in East Africa*, Colonial No. 290 (1952), H.M.S.O.

[2] A valuable geographical study of the population of Ruanda-Urundi, with a detailed coloured map (scale 1/750,000), has been made by Pierre Gourou (*La densité de la population au Ruanda-Urundi: esquisse d'une étude géographique*, Brussels, 1953).

[3] *Op. cit.*, p. 2.

[4] *Report on the sample census of agriculture, 1950–1* (Department of Statistics, Nigeria, 1952), p. 4. For Onitsha and Owerri, see A. T. Grove, "Soil erosion and population problems in south-east Nigeria," *Geogr. Journal*, vol. 117, 1951, pp. 291–306, and *Land use and soil conservation in parts of Onitsha and Owerri provinces*, Geological Survey of Nigeria, Bulletin No. 21, 1951.

[5] "A population map of Tanganyika Territory," *Geogr. Review*, vol. 26, 1936, pp. 353–75.

[6] *Sukumaland: an African people and their country. A study of land use in Tanganyika*, London, 1954.

[7] *Op. cit.*, p. 6.

[8] Sir Philip Mitchell, *op. cit.*, p. 33.

[9] See A. T. Grove, *op. cit.*, and C. Daryll Forde and R. Scott, *The native economies of Nigeria* (edited Margery Perham), London, 1946, pp. 71–8.

[10] See C. Daryll Forde and R. Scott, *op. cit.*, pp. 145–51; W. K. Hancock, *Survey of British Commonwealth affairs*, vol. ii, part ii, London, 1942, pp. 254–9; and K. M. Buchanan, "The Northern Region of Nigeria; the geographical background to its political duality," *Geogr. Review*, vol. 43, 1953, pp. 451–73.

[11] See R. W. Steel, "Some geographical problems of land use in British West Africa," *Transactions and Papers, 1948*, Institute of British Geographers, Publ. No. 14, 1949, esp. pp. 32–6.

[12] *Survey of British Commonwealth affairs*, vol. ii, part ii, 1942, p. 258.

[13] See M. Fortes, R. W. Steel and P. Ady, "Ashanti Survey, 1945–6: an experiment in social research," *Geogr. Journal*, vol. 110, 1947, pp. 147–79 (the Agogo land use map is Figure 6, facing p. 160); and R. W. Steel, "The population of Ashanti: a geographical analysis," *Geogr. Journal*, vol. 112, 1948, pp. 64–77.

[14] *The agrarian problem in Kenya*, Nairobi, 1947, p. 33.

This content downloaded from 142.51.1.212 on Thu, 24 Dec 2015 07:10:54 UTC
All use subject to JSTOR Terms and Conditions